A Study on the Effect of Consumer Trust, Perceived Risk and Benefit on Purchase Intention of Online Shopping in Vietnam

Pi-Yun Chen [1], Thien-Vu Tran [2]

[1,2] Department of Business Administration, Shu-Te University

59 HengShan Rd., Yanchao Dict., Kaoshuing, Taiwan

[1]pc112@stu.edu.tw, [2]vutrandn@gmail.com

Abstract: The emergence of electronic commerce has provided consumers with an entirely new way to purchase products or service through the Internet. However, they seemingly hesitate to purchase online because Internet vendors are distrusted, perceived as high risk and low benefit by general consumers. Hence, this study aims to investigate the impact of consumer trust, perceived risk and benefit on behavioral purchase intention of online shopping in Vietnam. The survey was conducted in Vietnam with 248 responses from students at Danang University. The results indicate that consumer trust and perceived benefit have strong impacts on consumers' willingness to buy. Perceived risk plays as a mediating role in the decision-making process of pre-purchase phrase. Due to the difference in culture and consumers' behavior, several interesting discussions and implications will be inferred in the case of Vietnam.

*Keywords:*Consumer trust, perceived risk, perceived benefits, purchase intention, online shopping, and Vietnam.

1. Introduction

With the advent of the Information Communication and Technology in the past decades, there has been a rapid increase of e-commerce in the world. The notion of e-commerce is referred to the process of buying, selling, transferring, or exchanging products, services, and/or information via computer networks, mostly the Internet and intranets [1]. Online shopping, a typical part of e-commerce, becomes a vital part of daily citizens' life in the world [2]. According to [3], U.S. online retail industry acquired $202 billion in 2011 and was expected to achieve $327 billion by 2016. Additionally, the online retail sales in 17 major European markets are forecasted to increase from US $129.6 billion in 2011 to US $230.4 billion by 2016. Despite the considerable increase of e-commerce in developed countries, developing countries like Vietnam are on the way of attempting to penetrate this lucrative online market.

Since the Decree 21/CP in March 1997 promulgated by Vietnam government, Vietnam officially joined the global network, and the Internet; then the Internet has grown rapidly in Vietnam [4]. The fact that, in July 2012, approximately 31 million Vietnamese (35.58% of population) have access to the Internet [5]. The majority Internet users utilize the Internet for reading news (95%), searching sites (94%), listening to music (77%), researching for school and office work (68%), chatting (66%), downloading music (59%), watching movies (51%), social networking (44%) and visiting forum (40%), while the small number of users utilizes the Internet for online shopping/auctions (35%) and banking (9%) [6]. It turns out that purposes to use the Internet for business take a small account. Consequently, Vietnamese e-commerce market is regarded as a sleeping e-commerce giant, according to Bangkok Post [7].

Online shoppers in Vietnam thus hesitate to purchase online because of distrust. In fact, 42% of Internet users generally do not trust in information found on the Internet, 60% of them do not trust in online payment system [6]. Likewise, Vietnamese consumers are confronted with risks in the cyberspace because they are lack of information technology awareness, and afraid of their personal information illegally exploited and the current e-commerce legal system is not powerful enough [8]. When it comes to risk, benefit should be involved in [9]. Risk reflects negative attribute, while benefits represent positive one. Consumers consequently make decisions to maximize the value from positive and negative attributes [10]. This study intent to takes trust, risk and benefit into account and investigates their effects on behavioral purchase intention in the context of online shopping in Vietnam. The remains of this study present a comprehensive literature, research models, research methodology, data analysis, research results, discussion and implications.

2. Literature Review

2.1 Online shopping

Online shopping, fundamentally a process of buying and selling of goods and services on World Wide Web, is a form of e-commerce. The [11]

reported that online shopping has become the third most popular based-Internet activity, following the e-mail usage and web browsing. Next, online shopping behavior is defined as the process of purchasing products or services via the Internet [12]. Online shopping activities sharing similar characteristics with traditional shopping are implemented through five core stages: (1) problem recognition, (2) search for information, (3) alternatives evaluation, (4) choosing products or service, and (5) outcomes evaluation [13].

2.2 Research Model

With the aims of examining consumer trust, risk and benefit in online shopping in Vietnam, several key research frameworks related to trust are reviewed. First of all, [14] presented the research model of consumer trust in an Internet-based store. It is hypothesized that consumers' trust in an Internet store affects their willingness to patronize the store. Second, [15] proposed and validated measures for a multidisciplinary and multidimensional model of trust in e-commerce that contains of four high-level constructs – disposition to trust, institution-based trust, trusting beliefs and trusting intentions. Third, [16] developed and examined a model of consumer trust in an e-commerce vendor, namely Trust Building Model (TBM). This model investigated the impact of initial consumer trust on intention to transact with an unfamiliar web vendor. Trust plays an essential role in online transaction. However, if trust overcomes perceptions of risk, consumers will behave web vendors by following their advice, sharing personal information with the vendor, and purchasing from the vendor's website. Last but not least, [10] developed a theoretical framework describing the trust-based decision-making process. Noting that Internet consumers' trust and perceived risk have strong impacts on consumers' decisions to purchase. This proposed framework is extended from the valence framework [17], assuming that consumers perceive products as having both positive and negative attributes. Accordingly, consumers make decisions to maximize the net valence resulting from the perceived risk (negative attribute) and perceived benefit (positive attributes) of the decision [10]. As a result, [10] proposed a basic theoretical framework to study a trust-based consumer decision-making process.

Therefore, trust plays a critical role in encouraging consumers to transact online [18, 19,

14]. However, it is incomplete for academic researchers to investigate trust impacting on purchase decision without engaging perceived risk and benefit. Hence, [10] systematically have built the trust-based consumer process with the combination of trust, perceived risk and benefit. In this study, we adopt this model to study because of two reasons. First of all, in comparison with other models, the trust-based consumer decision-making model adds the construct of perceived benefit. In the research of barriers to effective e-business in developing countries, [20] declared that there are three competing factors intending to influence on Vietnam e-commerce, in which perceived benefit of customers is a main key success factor. Eventually, it is reasonable to study perceived benefit in Vietnam e-commerce. Second, the security issue has been considered as the most severe hindrance towards online shopping in Vietnam [8]. Online shoppers are a bit reluctant to purchase online due to risks. This study adopts the construct of perceived risk to test how much online shoppers perceive risk and whether perceived risk mediates the relationship between trust and purchase intention. In sum, consumer trust, perceived risk and benefit are studied in a holistic view in the case of Vietnam.

2.3 Constructs in the research model
2.3.1 Purchase Intention

Purchase intention is referred to the probability that the consumer will purchase the product [21]. Consumer behavior is regarded as the ultimate variable of interest to a web-based vendor [15]. It denotes that consumer is willing to transact with vendors through the Internet. The most important thing of web vendor is to persuade the consumer to purchase. According to [22], purchase via the Internet is one of the most rapidly growing forms of shopping, with sales growth rates that overcomes the sales of buying through traditional retailing. Drawing on the Technology Acceptance Model (TAM) [23], Theory of Reasoned Action (TRA) [24], and Theory of Planned Behavior (TPB) [25], many e-commerce studies have shown that consumer intention involved in online transaction are a significant predictor of consumer's actual participation in online transactions [26].

2.3.2 Consumer Trust

The topic of trust has studied in many disciplines

since the 1950s [27]. The definition of trust is introduced in vary perspectives. Consumer trust in Internet shopping is defined as "the willingness of a consumer to be vulnerable to actions of an Internet merchant in an Internet transaction, based on the expectation that the Internet merchant will behave in certain agreeable ways, irrespective of the ability of the consumers to monitor or control that Internet merchant (p.79)" [28].

Previous studies have shown a significant relationship between consumer trust and purchase intention via Internet vendors [14, 15, 29, 30, 31, 10]. The [31] studied the positive influence of trust on marketing-relevant success factors, in which purchase intention is strongly directly impacted by consumer's trust. Likely, the study of [10] showed that a consumer's trust has a strong positive effect on the purchasing intention. The [15] studied the impact of initial consumer trust on intention to transact with a website and proposed the TBM. On the other research, [29] showed that trust is possibly among the most important antecedents of people's intentions to take part in purchase. These studies are seemingly in accordance with the TPB [25] that customer' belief in terms of trust effects on customer's intention. Therefore, this study proposes:

Hypothesis 1:A consumer's trust (TRUST) positively affects the consumer's intention to purchase (INTENTION).

2.3.3 Perceived Risk

Since [32] introduced the notion of "perceived risk" to consumer behavior research, it has witnessed a large of attention in academic community. His initial statement proposed that was "consumer behavior involves risk in the sense that any action of a consumer will produce consequences which he cannot anticipate with anything approximating certainty, and some of the which at least are likely to be unpleasant" [32]. There are various definitions of perceived risk. However, this study adopts the notion of perceived risk as a consumer's belief about the potential uncertain negative outcomes from the online transaction [10].

In previous studies, [33] identified five types of perceived product risk that are financial, performance, social, physical and psychological risk. In addition, some other types of risk such as time-loss [34], source credibility [34] and privacy [35, 36] are seemingly to be associated with online shopping. A review of past studies indicates that there are nine

dimensions of perceived risk including financial risk, performance risk, social risk, physical risk, psychological risk, time-loss risk, personal risk, privacy risk, and source risk.

Perceived risk has been considered as influencing the consumer purchase decision process [37, 16] due to uncertainty and potentially undesirable consequences in post-purchase [39, 40]. In other words, consumers may perceive a certain degree of risk in most purchase decision [41]. Therefore, they tend to purchase much more when feeling perceived risk less. The [36] considered trust as a mechanism of reducing risk in the Internet shopping environment. The empirical test of [42]'s trust model showed that consumer's trust is negatively associated with their perceived risk in Internet shopping. In other words, trust is a key determinant of action in the case of that there is perceived risk of a negative outcome. We hence suppose:

Hypothesis 2:A consumer's trust (TRUST) negatively affects the consumer's perceived risk (RISK) of a transaction.

Intention to purchase associated with perceived risk has been examined in many studies. A number of marketing researchers have posited that perceived risk affects purchasing behaviors [17]. In the research of consumer trust in an Internet store, [14] indicate that reducing perceived risk would increase a consumer's willingness to purchase. It means that a consumer may not be willing to buy from the Internet vendor when perceiving high risk. Consistent with the TPB [25], perceived risk is considered as a notion of perceived behavior control that directly impact on behavioral intention. In the TBM, perceived web risk, a user believes it is unsafe to use the web or that negative consequences are possible, considered as an institutional factor negatively affecting intention to purchase from a legal web site [16]. Consequently, we hypothesize:

Hypothesis 3:A consumer's perceived risk (RISK) negatively affects a consumer's intention to purchase (INTENTION) on the Internet.

2.3.4 Perceived Benefit

According to [43], the Internet provides consumers with a number of benefits over traditional retail channels. First, the Internet enables consumers to browse product/service, collect data, locate information, download information, compare prices, buy products, place/change orders, and receive feedback without travelling to a shopping mall [43].

Therefore, consumers have a large of selection from the vendors and buy a cheaper product or service because they can compare and shop for lowest prices. Second, there is no constrained time and place to shop because consumers can browse websites and purchase online 24 hour a day and 7 days a week at home or office. Third, the Internet shopping provides consumers with convenient auction participation and finding of unique items [1]. Finally, no waiting lines and no pressure from the sales people are also reported to contribute to a more enjoyable shopping experience in the Internet [43]. In sum, convenience is considered as the primary reason for online shoppers [45, 36, 43]. There are many definitions of perceived benefit in marketing; however, this study adopts the definition of [10] that is perceived benefits as a consumer's belief about the extent to which he or she will become better off from the online transaction with a certain Website.

Although several researchers have discussed the benefit of online shopping, a few of published research have provided support for the impact of this perceived benefit on consumers' Internet shopping behaviors [43]. The [43] concluded that perceived risk related negatively to future intentions to purchase, while perceived benefit was determined to be a positive predictor of future intentions to visit and purchase online. Thus, we propose:

Hypothesis 4:A consumer's perceived benefit (BENEFIT) positively affects a consumer's intention to purchase (INTENTION) on the Internet.

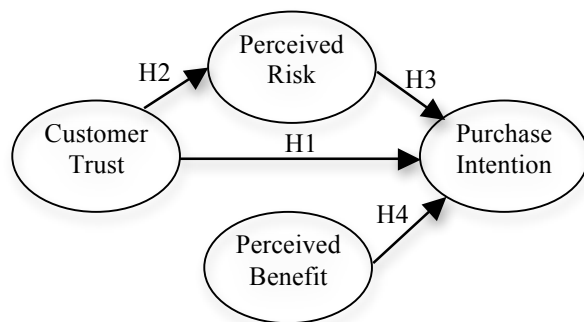# 3 Research Methodology
3.1 Research Model.

Figure 1. The theoretical model

The purpose of this study is to examine the impact of consumer perceptions including consumer's trust, perceived risk and benefit on their behavioral purchase intention. Specially, this study explores the relationship between perceptions of consumer's trust and purchase intention, in which perceived risk plays a mediating role. According to the literature review mentioned, this study builds a research framework as shown in the figure 1

3.2 Data Subjects and Sampling
3.2.1 Subjects
The subjects of this study focus on domestic Vietnamese customers. This study focuses on students who are young and well educated. Although not implicit shown, the focus groups of this research are primarily from two types; undergraduate and graduate students who live in Da Nang city, the Central of Vietnam.

3.2.2 Sampling
The targeted population was drawn from students from Da Nang University. This group was chosen for various reasons. Students are young and well educated. They share similar characteristics, academic level and consumer behavior. Da Nang University is the prestigious and biggest university in the Central of Vietnam. The questionnaires were expected to yield a high return and there was a high rate of returned questionnaires.The survey was delivered to a sample frame of undergraduate and graduate students in Danang University, Vietnam. This type of data collection is considered as a convenient sampling approach. Data were gathered through questionnaires written in Vietnamese. The paper-based questionnaires were sent out directly and online version of questionnaires was delivered via e-mail. The survey was carried out through two steps. First, participants were asked to visit a B2C website and then required to search for a particular product or service, gather certain information in details, but no actual purchase. Then, participants were required to fill the questions out, in which a seven-point Likert scale from 1 – strongly disagree to 7 – strongly agree was utilized. This part of the questionnaire contains items measuring consumer's trust, perceived risk and benefit, and purchase intention. The second part is the participant's demographical information. A total of 380 questionnaires were sent out (200 directly and 180 through e-mail), 362 questionnaires were returned, accounting for 95.2 percent. Indeed, 296 responses (82%) have purchased online while 66 responses (18%) having not purchased were excluded from the data process. Next, missing and outlier (extremely

high or low) data are eliminated. An effective sample of 248 questions was left. The data collection period last from February 27 to March 13, 2013.

3.3 Research Methodology

This study adopts the Partial Least Squares (PLS) for data analysis. The PLS is such an advantageous statistics techniques that it is used for analyzing Structural Equation Model (SEM), including measurement and structural models with multi-item variables containing direct, indirect, and interaction effects [46]. Similar to covariance structure analysis, applying the PLS algorithm requires an extensive model evaluation [48]. After measurement models are evaluated and a comparison of reflective and formative measurement models is stressed, the assessment of the structural model will be demonstrated in detail [48]. We use SmartPLS 2.0 software as a tool for analysis. Finally, the data analysis procedures: 1) descriptive data, (2) reliability and validity, and (3) structural model assessment.

4. Data Analysis and Results

4.1 Sample Description

The demographics consists of five major information: (1) Gender, (2) Age, (3) Experience in Internet Surfing, (4) Experience in computer utilizing, and (5) Educational Level. Of the 248 respondents, there is 48.4% of male and 51.6% of female. Moreover, the percentage of the respondents for age 18 – 20, 20 – 22, 22 – 24, and more than 24 are 14.1%, 43.5%, 17.3% and 25%, respectively. Especially, most of respondents are at the age of 20 – 22 (more than 40%). In terms of the Internet experience, most of respondents get involved in the Internet for more than 4 years (68.5%) dominantly while the percentage of those having under 1 years, 1 – 2 years, and 2 – 4 years of surfing the Internet are 2.0%, 8.5%, and 21.0%, respectively. Last but not least, respondents are at educational level of college (46.4%), university (39.9%) and master (13.7%). The majority of respondents are undergraduate students (85.5%)

Also from the descriptive statistics of behavioral purchase in Vietnam, Internet users have a tendency to visit www.muachung.vn website (34.5%) and www.vatgia.com (12.5%), and the other websites (under 10.0%). In fact, the business model of the www.muachung.vn serves as groupon. Consumers purchase products or service in groups for the sake of taking advantages of big sales and promotion. The frequency to visit these website accounts for 1 time/ month (20.02%), 2 – 3 times/ month (22.6%), 1 time/ week (21%), 2 – 3 times/ week (22.2%), and more than 4 times/ a week (14.1%). The majority of consumers purchase clothing/ shoes (48.4%) and books/ magazines (11.7%), while minority of them buy computer hardware (6.5%), software (3.5%),CD/Tapes/Albums (0.8%), E-book/ Online document (6%), travel arrangement (2.8%), home electronics/ appliances (6.5%), cinema/ play ticket (2.8%). They spend money on purchasing less than 10 USD (32.3%) and from 10 USD to 20 USD (39.9%), respectively. There are few of shoppers spending more than 20 USD to purchase. This phenomenon can be explained that most of participants in the survey are students who have low income.

4.2 Reliability and Validity of Variables

4.2.1 Content Validity

To ensure content validity, seven experts were asked to examine and comment on the questionnaire. There were few changes recommended by experts in demographics for sake of adapting Vietnam e-commerce circumstances; however, all measures in this study were seemingly to be not changed because they have been previously validated. A pilot pretest of the questionnaire was conducted to thirty respondents for the purpose of getting suggestions and revising possible questionnaires. Respondents were randomly selected at two separate campuses of Danang University. In general, there were no major changes recommended in terms of questionnaires and demographic information. All respondents understood the questionnaire in Vietnamese.

4.2.2 Reliability

In general, there are two kind of measurement model, including principal factor (reflective) model and composite latent variable (formative) model. In the reflective measurement model, the co-variation among the indicators is caused by variation in the underlying latent variable, while in the formative model, variance of indicators causes the changes of underlying latent variable [49]. In this study, the RISK and BENEFIT constructs are assumed to be formative because there are different types of indicators reflecting these constructs such as RISKs (product risk, financial risk, and overall risk) and BENEFIT (convenience, saving money, saving time, quick accomplishment of a shopping task, and productivity in shopping), and these indicators are not interchangeable and cause latent constructs. The other constructs, TRUST and PURCHASE INTENTION, are reflective latent variables.

represent how well observed items reflect the constructs. In this study, Cronbach's alpha is used to assess the reliability of the multi-item scales. The Cronbach's alpha is higher than the minimum cut-off point of 0.70 [51, 52]. Besides Cronbach's alpha, Composite Reliability (CR) is a helpful indicator for measure internal consistency [53]. The CR should be higher than the value of 0.7 to be acceptable [53]. In addition to Cronbach's alpha and CR, Average Variance Extracted (AVE) is adopted to measure the convergent validity that explains the average percentage of variance among the items of a construct [52]. The minimum value of AVE is higher than 0.50 [53]. It infers that more than 50% of the variance of the measurement items can be accounted for by the constructs [10]. The table 1 figures out the Cronbach's alpha, composite reliability, and AVE in detail.

- **Evaluation of reflective constructs**

The [50] noted that measurement model testing

Table 1 Cronbach's alpha, AVE, and CR of reflective constructs

Variable	Types of indicators	Cronbach's α (alpha > 0.7)	AVE (value > 0.5)	Composite reliability (value > 0.7)
Consumer Trust	Reflective	0.8370	0.6715	0.8910
Perceived Risk	Formative	NA	NA	NA
Perceived Benefits	Formative	NA	NA	NA
Purchase Intention	Reflective	0.7952	0.7114	0.8803

Note: NA – Not Applicable

To assess indicator reliability, [46] proposed a quality criterion for the reflective measurement models through cross-loading values. These values are verified to ensure that variables really have higher load in their factor origin. The table 2 shows that all loadings of consumer trust and purchase intention are greater than 0.7, and every indictors has achieved the higher loading than its desired criteria. Therefore, the reflective measurement model fulfills the desired quality criteria [46].

Table 2 Cross loading of consumer trust and purchase intentions.

	TRUST	PURCHASE INTENTION
TR1	0.8398	0.5531
TR2	0.8076	0.5249
TR3	0.8375	0.5263
TR4	0.7889	0.4365
PI1	0.5663	0.8831
PI2	0.5411	0.8780
PI3	0.467	0.7579

▪ **Evaluation of formative constructs**

In the contrast to reflective constructs, formative constructs are assumed that there is no multi-collinearity among indicators [54]. However, it is significantly necessary to check any multi-collinearity among the indicators. Indeed, Variance Inflation Factor (VIF) is adopted to evaluate the reliability of formative constructs with the criteria that VIF is less than 3.3 that show an excellent value [54]. Otherwise, VIF is less than 10 that no collinearity is acceptable [52]. In fact, the table 3 describes that the highest VIF was 2.011, and thus all of VIF values are less than 3.3. It turns out that there is seemingly no existence of multi-collinearity in the formative measurement.

Table 3 VIF and item weight for the formative constructs

	Items	Item weight	VIF(value < 3.3)
RISK	RI1	0.302	1.751
	RI2	0.430	2.011
	RI3	0.273	1.973
	RI4	0.171	1.970
BENEFITS	PB1	0.221	1.274
	PB2	0.130	1.220
	PB3	0.103	1.277
	PB4	0.231	1.294
	PB5	0.6743	1.295

4.2.3 Validity

Construct validity is estimated by means of convergent validity and discriminant validity [47]. Convergent validity represents items of a specific construct converge or share a high proportion of variance in the same construct, while discriminant validity indicates a construct is truly distinct from other constructs [52]. According to [51], there is no means representing a reasonable criterion for evaluating formative measurement model because formative indicators do not have to be strongly interrelated. Thus, estimating reflective constructs is available in this section.

▪ **Convergent validity**

A common measure to examine convergent validity is the AVE [53]. The AVE of less than 0.5 is considered insufficient, as more variance is due to error variance than to indicator variance [55, 56]. As shown in the table 1, all AVE of more than 0.5 indicates that measurement of responses is not highly correlated.

▪ **Discriminant validity**

Discriminant validity is defined as the dissimilarity in a measurement tool's measurement of different construct [52]. If a latent variable's AVE is larger than the common variances of this latent variable with any other of the model's constructs, discriminant validity is proven [53]. Diagonal elements in the matrix are the square root of AVE. The value of inter-construct correlations in the lower matrix should be not exceeded the diagonal elements. It is convinced that latent variables are adequate for discriminant validity.

Table 4. Squared correlations of among reflective constructs

	TRUST	PURCHASE INTENTION
TRUST	0.819	
PURCHASE INTENTION	0.627	0.843

In sum, after evaluation of reliability and validity of both reflective and formative constructs, the results show that criteria to test these values are totally satisfied.

4.3 Structural model assessment

The structural model is estimated through path coefficients and R squared. R squared value is considered as a measure of goodness of fit in PLS. Path coefficients indicate how well the model is performing [46]. The results reflect that the direct effect of TRUST on PURCHASE INTENTION is strongly positive with the path coefficients 0.302.

On the other hand, the indirect direction (TRUST → RISK → PURCHASE INTENTION) reports that TRUST had a strong negative effect on RISK with path coefficient -0.556 and significant at level of 0.001 and RISK also had a negative effect on PURCHASE INTENTION with the path coefficient -0.165 at the significant level of 0.01. The path coefficient of indirect effect is valued at 0.0917 ((-0.556)×(-0.165)). In comparison with the direct effect (0.302), the indirect effect (0.0917) is less efficient than the direct way.

Finally, the relation of BENEFIT → PURCHASE INTENTION serves the path coefficients 0.411 at the significant level of 0.001 (BENEFIT → PURCHASE INTENTION). Thus, we conclude that the hypothesis1, 2, 3 and 4 are supported.

Hypothesis	Path Coefficient	t-value	p-value	Support
H1: TRUST → PURCHASE INTENTION	0.302	4.5993	$p < 0.001$	Yes
H2: TRUST → RISK	- 0.556	11.7446	$p < 0.001$	Yes
H3: RISK → PURCHASE INTENTION	- 0.165	2.7009	$p < 0.01$	Yes
H4: BENEFITS → PURCHASE INTENTION	0.411	8.4358	$p < 0.001$	Yes

Table 5 The summary of path coefficient and t-value.

R^2 value of the endogenous constructs is considered as a key determination to assess predictive power of the structural model [47]. According to [57], there is no generalizable statement about acceptable threshold values of R^2. However, the greater R^2 is, the stronger the variance of model explained is. In this study, the R^2 for RISK and PURCHASE INTENTION are 0.309 and 0.541 reflecting the model provides strong explanations for the variance in perceived risk and purchase intention.
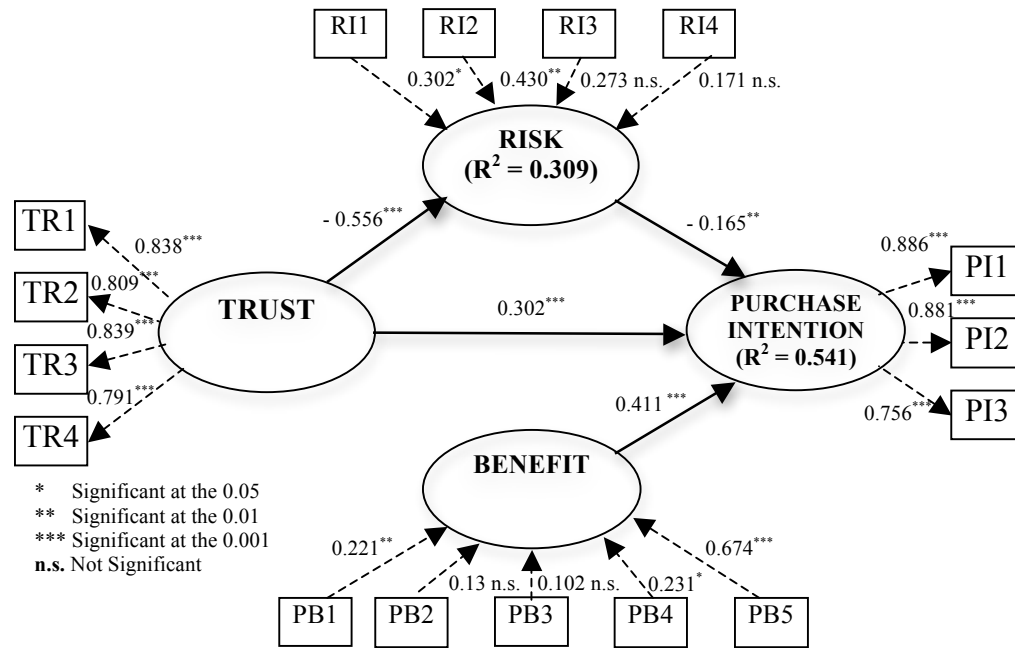

Figure 2. Research results

5. Conclusions
5.1 Discussion

As a result of the figure 2, there are several issues needed to interestingly discuss on the structural model and the measurement model.

For the structural model, all of latent variables have significant impacts on consumer intention to purchase, in which perceived benefits has the strongest effect on purchase intention (0.411[***]). The direct and indirect effect of consumer trust on purchase intention apparently achieves the value of coefficient at 0.394 (0.302 + 0.0917), which is seemingly to be equal to the effect of perceived benefit on purchase intention. The phenomenon can be explained that the majority of Vietnamese consumers purchases online because they feel many

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benefits from online shopping in terms of convenience, time-saving, and money-saving, instead of traditional shopping. Indeed, purchasing online in a group can usually attain benefits from discounts and big sales in Vietnam. Vietnamese behaviors are likely to interest in low price and convenient shopping tasks. Consequently, the strongest impact on purchase intention in the case of Vietnam is perceived benefit.

In this study, consumer trust has both direct and indirect effect on purchase intention. The results indicated that the coefficient of direct effect is 0.302, while the coefficient of indirect effect is 0.0917. These results are consistent with the [10]'s research that consumer trust had stronger effect on purchase intention, rather than consumer trust affecting on purchase intention with the mediating construct of perceived risk. It is implied that although recently emerging in the online market and actually going behind the developed countries, Vietnam e-commerce industry is on the way to catch up with developed countries' e-commerce industry.

For the measurement model, the discussion on reflective and formation variables is considered. In the reflective variables, indicators in each variable are strongly correlated and are interchangeable [28]. All outer loadings of reflective variables (consumer trust and purchase intention) strongly reflect the latent variables. Indeed, TR1, TR2, TR3, and TR4 have strong effect on TRUST at the significant level of 0.001; and, PI1, PI2 and PI3 also have strong impacts on INTENTION at the significant level of 0.001. It is inferred that these questions are respectively representative of latent variables and thus, are useful and meaningful for this research model.Different from reflective variables, outer weights of formative variables, considered similarly as the standardized beta coefficients, contribute to form latent formative construct. A look at the perceived risk's outer weights reveals that there are 4 indicators, 2 at which are significant. Among the significant indicators, product risk (RI1) has the greatest impact (0.43^{***}), followed by uncertainty about vendor RI2 (0.302^{***}). The non-significant indicators are financial risk (RI3) and overall risk (RI4).

Regarding to the first non-significant indicator (RI3), the phenomenon should be explained that consumers are seemingly to perceive no financial risk because the Internet vendors offers many safe options to pay, such as on-site payment. It means

that after goods are delivered at home or offices, money is paid. Indeed, Vietnam differs from foreign countries considerably in payment system, in which credit system of electronic banking is too weak for online shopper to pay online. It is obvious that upgrading and innovating e-banking system is a necessarily priority task for the sake of accelerating e-commerce industry in Vietnam.

Another non-significant indicator, overall risk (RI4), is potentially explained that the question is too meaningfully broad to be understood by respondents, while the overall-risk includes 9 aspects as mentioned in literature review. The meaning of this question is not adequate to interpret the overall-risk.

The perceived benefit contains 5 indicators, 2 of which PB2 and PB3 are insignificant. Money-savings (PB2) and time-saving (PB3) can be respectively explained that consumers had transacted at an actual B2C website before they answered these questions. They probably answered the survey through their experience or memories. The remaining indicators (PB1, PB4, and PB5) are strongly significant. Concluding that most Vietnamese purchase via the Internet because of its convenience, rapid procurement and productivity in shopping. In sum, though some indicators are statically insignificant, all questions are designed to cover most aspects of benefit.

5.2 Contributions

This study has both theoretical and practical contributions. From the theoretical perspectives, a dozen of studies have investigated the impact of trust on purchase intention and the impact of perceived risk on purchase intention separately. A few researches have proved a holistic view of consumer trust, perceived risk and benefits, and purchase intention in the process of online consumers' purchase decision-making. Moreover, this study reviews literature of the relations among trust, risk and benefit and tests them in Vietnam. Hence, this study perhaps provides the most comprehensive understanding of the trust and risk related factors in B2C Vietnamese environment.

From the practical viewpoint, the results highlight a meaningful implication that trust and perceived benefit may play important roles in many successful e-commerce transactions in Vietnam. Comparison with the prior research of [10] noting that perceived benefit slightly affect purchase

intention, in this study perceived benefit have a strong effect on purchase intention. Furthermore, perceived risk slightly impacts purchase intention. In sum, this study identifies a number of potential determinants of purchase intention and induces some practical implications in the case of Vietnam.

5.3 Implications

Perhaps, due to different cultures and behavioral consumptions, Vietnamese consumers seemingly tend to achieve benefit more than other countries do when making purchases online. To attract more consumers, website vendors should upgrade the website for their customers' convenience by lowering shipping fees, and designing the transaction process quickly. Enhancing perceived benefit is extremely essential for Vietnamese click-and-mortar companies to allure more online shoppers.

Likewise, in order to enhance trust, website vendors should build trustworthiness mechanism so that consumers perceive it as trustworthy and believable. Website vendors should provide as much comprehensive information about their products or services as the real products or services they supply. Additionally, they should thank to the third-party seal to confirm that they are accredited.

5.4 Research limitations

Several limitations of this study militate future findings' ability to generalize and make conclusions. First, this study emphasizes 3 constructs of consumer trust, perceived risk and benefit, but there is no investigation of their antecedents. This study focuses on intention to purchase (pre-purchase), instead of purchase behavior (purchase and post-purchase). On the other hand, the constructs of perceived risk and benefit are formative so that more indicators should be added in order to ensure the reliability and validity of the measurement model. Second, our research samples mostly are students in Danang University located in the Central of Vietnam, not potential online shopper in Vietnam.

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Therefore, the results may not provide enough evidences for expressing the behavior of Vietnamese online consumers. Finally, the questionnaires requires participants to visit a particular B2C website in Vietnam and choose a specific product or service. However, we cannot control and supervise participants when answering these questions. Likewise, some of participants tick off questionnaires without reading and following the instruction. In addition, the questionnaires are translated into Vietnamese, so it is inevitable that some of the meaning is lost during the translation.

5.5 Future Research Suggestions

There are several future research directions that will develop a comprehensive understanding of perceived factors and importance of the nature of B2C e-commerce. First of all, using different methodologies such as interview, case studies, or focus groups is encouraged. Second, the samples were seemingly to be biased and cannot stand for the whole Vietnamese online consumers. Thus, the generalizability of this study's results should be further tested with the different types of samples. Third, consumer trust, perceived risk and benefit level develop gradually over time [58, 59]. Future longitudinal studies could uncover this issue much more. Fourth, the inverse relationships such as perceived risk and benefit impacting on consumer trust, and/ or interactions of among consumer trust, perceived risk and benefits are possible. Thus, future research should take account of inverse causal relationships and meditating effects of trust and risk. Fifth, antecedents and descendants of perceived determinants should be added in the research framework. Future research is more meaningful if the framework expands not only behavioral intention (pre-purchase) but also behavior (purchase and post-purchase) such as purchase, loyalty and word-of-mouth B2C e-commerce in Vietnam. Future research will hence offer valuable implications for both academic research and practical society

Appendix 1 Respondent's demographic

Measure	Item	Frequency	Percentage (%)
Gender	Male	120	48.4%
	Female	128	51.6%
Age	18 – 20	35	14.1%
	20 – 22	108	43.5%
	22 – 24	43	17.3%
	More than 24	62	25.0%
Internet Experience	Under 1 year	5	2.0%
	1 – 2 years	21	8.5%
	2 – 4 years	52	21.0%
	More than 4 years	170	68.5%
Educational Level	College (3 years)	115	46.4%
	University(4 or 5 years)	99	39.9%
	Master	34	13.7%

Appendix 2 Questionnaires

	Variables	n	M	SD
	Consumer Trust			
TR1	This site is trustworthy.	248	5.06	1.34
TR2	I trust that this vendor keeps my best interests in mind.	248	4.79	1.28
TR3	I believe in the information that this vendor provides me.	248	4.81	1.24
TR4	This vendor appears to be one who keeps promises and commitments.	248	4.81	1.28
	Perceived Risk			
RI1	There is too much uncertainty associated with shopping from this vendor.	248	3.5	1.42
RI2	Purchasing from this Website would involve more product risk (i.e. not working, defective product) when compared with more traditional ways of shopping.	248	3.58	1.56
RI3	Purchasing from this Website would involve more financial risk (i.e. fraud, hard to return) when compared with more traditional ways of shopping.	248	3.51	1.53
RI4	How would you rate your overall perception of risk from this site?	248	3.73	1.45
	Perceived Benefit			
PB1	I think using this Website is convenient.	248	5.15	1.19
PB2	I can save money by using this Website.	248	4.96	1.30
PB3	I can save time by using this Website.	248	5.4	1.14
PB4	Using this Website enables me to accomplish a shopping task more quickly than using traditional stores.	248	5.31	1.27
PB5	Using this Website increases my productivity in shopping (e.g. make purchase decisions or find product information within the shortest time frame).	248	4.99	1.27
	Purchase Intention			
PI1	I am likely to purchase the product(s) on this site.	248	5.07	1.31
PI2	I am likely to recommend this site to my friends.	248	5.07	1.47
PI3	I am likely to make another purchase from this site if I need the products that I will buy.	248	5.43	1.17

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